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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,923	03/24/2004	Kimasaru Ura	91752	5172
24628	7590	03/25/2008		
WELSH & KATZ, LTD 120 S RIVERSIDE PLAZA 22ND FLOOR CHICAGO, IL 60606			EXAMINER CHAUDHRY, SAIED T	
			ART UNIT 1792	PAPER NUMBER
			MAIL DATE 03/25/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/807,923

Applicant(s)

URA, KIMASARU

Examiner

Saeed T. Chaudhry

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/88)
Paper No(s)/Mail Date ____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 22, 2008 has been entered. Claims 14-26 have been canceled and claims 1-13 are pending in this application for consideration.

Claim Objections

Claims 1-13 are objected to because of the following informalities:

The term "characterized" should be changed to - - comprising - - or - - wherein - -, so as to comply with accepted U.S. Patent practice. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2, 9 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-07-055308 in view of Rankin.

JP-07-055308 discloses a method for cleaning a drain pipe with a nozzle (8) provided on a leading end of a high pressure hose (2), a universal guide (12) is attached to the leading end of the nozzle (8), high pressure water is jetted obliquely rearward from plurality of injection holes provided in the nozzle (8), a propulsion force is generated in the nozzle by the jetting force, wherein the nozzle is injected in the drain pipe and the nozzle is being rotated by the unbalanced thrust by the difference in the diameter between the injection holes 9a to 9d. The jet force of the injection hole (10) is smaller than the total water pressure of the injection holes 11, 12, and 13. Therefore, the nozzle's injection hole 10 is always oppose the inner peripheral surface of the drain pipe (see translation and Fig 8). The reference fails to disclose that the nozzle is oppose the inner peripheral surface of the drain pipe.

In analogous art, Rankin (5,323,797) disclose a method for cleaning a drain pipe with a high pressure hose having a nozzle at the leading end of the pressure hose. Wherein the nozzle is constantly pressing against the interior wall of the pipe.

A rotating, high pressure hose having a biased cleaning nozzle is inserted helically into the pipe at a non-parallel angle ranging from slightly greater than 0.degree. to slightly less than 90.degree., relative to the longitudinal axis of the pipe. By entering the pipe at anon-parallel angle relative to the longitudinal axis of the pipe, the biased cleaning nozzle and high pressure hose are forced to enter the pipe in a helical manner and maintain their travel through the pipe in a helical manner. The jetting forces from the biased nozzle, keep the nozzle pressed against the interior surface of the pipe and provide for the elimination of streaking and less damage to the interior surface of the pipe. By using a high pressure hose and biased cleaning nozzle in a rotating, helical manner, the time required to clean interior pipe surfaces is greatly reduced from

the methods and apparatus currently used, and with better results (see col. 2, line 61 to col. 3, line 9).

Nozzle 22 is a uniquely shaped nozzle, specially designed to be used with the rotating hose device 10 and is generally of a cylindrical shape and having a combination of flat, beveled, pointed or rounded head members 106, 114, 120, 134, as depicted in FIG. 9, FIG. 10, FIG. 11 and FIG. 12. As depicted in FIG. 5, nozzle 22 has three or more jets 100, 102, 104. A plurality of three or more jets 100, 102, 104, positioned as shown in FIG. 5, FIG. 6, FIG. 7 and FIG. 8, ensures that the nozzle 22 will not be centrally located within the pipe 24, and that nozzle 22 is pressed against the interior wall of pipe 24. By constantly pressing the nozzle 22 against the interior wall of pipe 24, nozzle 22 produces optimum cleaning and significantly reduces the "streaking" effect left by prior art nozzles. As depicted in FIG. 5, Nozzle 22 has at least two lower jets 100, 102 which point away from the head of the nozzle 22 and one upper jet 104, which points generally in the direction of the head 106 of the nozzle 22. FIG. 5 shows a first imaginary horizontal line 110, which is a central line which bisects nozzle 22. Referring to FIG. 6, a plan view of nozzle 22 looking down at the head 106 of nozzle 22 is illustrated with the lower jets 100, 102 positioned 30 degrees to 67.5 degrees from a second imaginary line 108. In FIG. 5b(1), lower jets 100 and 102 are positioned 30 degrees from horizontal line 108. In FIG. 7(2), lower jets 100 and 102 are positioned 60 degrees from horizontal line 108. In FIG. 7(3), lower jets 100 and 102 are positioned 67.5 degrees from horizontal line 108. The positioning of jets 100, 102 in FIG. 6(1), (2) or (3), depends upon numerous variables including pipe diameter, surface conditions, length of pipe to be cleaned and type of deposits or coatings. Referring to FIG. 7, lower jets 100, 102 can be positioned 30 degrees to 60 degrees from horizontal line 110.

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In FIG. 7(1), jets 100, 102 have been positioned 60 degrees from horizontal line 110. In FIG. 7(2), jets 100, 102 have been positioned 30 degrees from horizontal line 110 (see col. 5, lines 41-68).

It would have been obvious at the time applicant invented the claimed process to clean a drain pipe as disclosed by JP-07-055308 (there after 308') since the 308 reference discloses all the limitation except disclosing that the nozzle specific injection hole is always in opposing to the inner peripheral surface of the pipe. One of ordinary skill in the art would have expected with the teaching of the Rankin that position of nozzle injection holes would ensure that the nozzle will not be centrally located within the pipe and that nozzle is pressed against the interior wall of pipe. Further, one of ordinary skill in the art would have manipulate the angles of the injection holes since Rankin has disclosed that the injection holes can be from 30 degrees to near 90 degrees and one hole has different angle and the other injection hole has different angle (see Figs. 7 and 8). Furthermore, it is well known in the art to use hot water for loosening the contaminated material from inside of the drain pipe. Therefore, one of ordinary skill in the art would use hot water to increase the cleaning efficiency.

Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-07-055308 in view of Rankin and Folts et al.

JP-07-055308 and Rankin were discussed supra. However, the references fail to disclose 90 degree angle of the injection hole.

Folts et al (5,314,545) disclose a method for delivering high pressure velocity working liquid to an internal access opening for cleaning and removing thin cross section material. A nozzle having 90 degree angle with respect to the longitudinal axis of the nozzle.

It would have been obvious at the time applicant invented the claimed process to incorporate the cited nozzle of Folts et al into the process of JP-07-055308 to increase the area of the injection nozzle into drain pipe. Further, one of ordinary skill in the art would manipulate the angles of the injection holes with routine experimentations for efficient removal of the material from inside of the drain pipe and to increase the spiral movement.

Claims 5-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-07-055308 in view of Rankin, Folts et al and Iida et al.

JP-07-055308, Rankin and Folts et al were discussed supra. However, the references fail to use mixture of liquid and gas.

Iida et al (5,408,991) discloses a method of cleaning a pipe with a mixture of liquid and gas. A cleaning scheme for supplying a cleaning solution such as tap water or a detergent in conduits to clean the conduits of the endoscope, a cleaning scheme for supplying a fluid mixture of a cleaning solution and a gas, i.e., a so-called two-phase (gaseous and liquid phases) flow is also known as a scheme for cleaning the conduits in the endoscope (see col. 3, lines 3-9).

It is well known in the art of cleaning the pipe to utilize mixture of air and water to increase the cleaning efficiency as disclosed by Iida et al. Therefore, it would have been obvious to include a mixture of water and air as disclosed by Iida et al into the process of Masaru to clean drain pipe and increase the cleaning efficiency.

Applicant's arguments with respect to claims 1-13 have been considered but are deemed to be moot in view of the new grounds of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saeed T. Chaudhry whose telephone number is (571) 272-1298. The examiner can normally be reached on Monday-Friday from 9:30 A.M. to 4:00 P.M.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Barr, can be reached on (571)-272-1414. The fax phone number for non-final is (703)-872-9306.

When filing a FAX in Gp 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Saeed T. Chaudhry

Patent Examiner

/Michael Barr/

Supervisory Patent Examiner, Art Unit 1792